PLANT HUNTING IN CHILE

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Historically the main source of good garden plants has been from Western China. However, British gardens have also benefited a great deal from introductions hailing from southern South America. Although numerically these plants cannot attempt to compete with the vast quantities introduced from Western China, temperate South America can boast some of the most stunning and unusual plants cultivated in British gardens today.

The only countries of the South American continent having a climate comparable with that of Britain and Ireland are Argentina and Chile. Garden-worthy plants from these two countries have found their way into British gardens through the implacable efforts of intrepid botanists and horticulturists, such as the Victorian plant collector, William Lobb, who pioneered the introduction of some of the most noteworthy plants from temperate South America. Latterly, Harold Comber, who made several extended visits during the 1930s, not only reintroduced many of William Lobb's trees and shrubs but also made some notable additions. Many of the plants from temperate South America that grow in Britain and Ireland today, originated from the seed that Comber collected.

Chile has, for its area, the greatest span of latitude of any country; a distance of 4,200 km, and yet it is only 180 km wide in places. Its length is dominated by the backbone of South America, the Andes mountains, which in the north adjacent to Santiago is a crenellated wall of rock reaching intimidating heights of over 7,000 metres. Travelling south through the Andes the mountains become more diminutive in comparison and are represented in the Lake District by volcanoes which are barely 3,000 metres high.

The Chilean lake district is where many of the more horticulturally noteworthy plants come from. This area lies between southern Chiloe in the south and Temuco in the north, covering an area of about half the size of New Zealand's South Island, with which it has profound botanical affinities.

Here the temperate flora of Chile reaches its greatest degree of diversity and consists of moist temperate rain forests. In places, particularly at higher altitudes, these forests are dominated by the southern beech, *Nothofagus*. However, at lower altitudes the forest comprises an array of evergreen trees many of which are familiar garden plants in the milder areas of Britain and Ireland.

Much of the Pacific coast is still clothed in luxuriant primeval rainforest, particularly the region south of Valdivia and parts of the Island of Chiloe. The rocky outcrops are home to a host of native plants, some of which are well established in the British Isles for their salt tolerance, such as *Escallonia rubra* var. *macrantha*, which in the wild seems to have much richer crimson-pink flowers than the clone grown in cultivation.

As well as many species of terrestrial orchids and ferns, there are well known plants, such as *Gunnera chilensis, Gaultheria mucronata*, and thickets of *Fuchsia magellanica. Francoa appendiculata* can also be seen here and it is particularly interesting to note that in the wild this plant always favours a shaded position. In contrast, cultivated plants are normally grown in full sun and one would assume that this relatively tender plant would be afforded more winter protection if it were grown in woodland conditions.

Another plant which seems to be entirely restricted to the coast is *Lobelia tupa*. This beautiful and imposing perennial, two metres tall and the same across, has an impressive coastal distribution, from Santiago in the north, to 800 km south, just below Valdivia in the Lake District.

As one ascends the coastal Cordillera, through magnificent evergreen forests where every branch is festooned in mosses and liverworts, there is an air of familiarity with some of the plants which grow in Britain. One finds well known garden plants such as *Eucryphia cordifolia*, which towers into a deep blue sky, its dark green foliage dripping with bumble bees on white dog-rose-like flowers. Draped from one tree to the next, high up in the canopy, are the intertwining stems of *Lapageria rosea,* the national flower of Chile, which has bell-shaped, rich crimson flowers held in a pendulous position to give the ever-energetic humming-bird easy access to rich reserves of nectar, thus ensuring pollination.

The long and tubular, reddish orange flowers of another climber, *Campsidium valdivianum*, are also visited by humming birds and successful pollination results in the production of long, pendulous inflated fruits.

Perhaps the showiest of all Chilean climbers is *Mutisia decurrens,* a member of the Compositae, which has vivid orange flowers that almost glow within the relative darkness of these forests.

At higher altitudes of the coastal Cordillera just south of Valdivia there are vast forests of one of the most important trees in temperate South America, the conifer *Fitzroya cupressoides.* The sheer magnitude of this tree, which has been known to live 4,000 years, is awe-inspiring. Some specimens stand at over 70 metres in height and with a trunk diameter of over four metres.

Unfortunately, the timber qualities of *Fitzroya* are such that man has found it invaluable and this is reflected in the fragile nature of existing populations. Vast areas of the coastal forests have been destroyed by fire and all that exists of much of it today are their ghostly stark white trunks.

Fortunately some areas are still preserved and with them a very interesting flora. Shrubby plants include thickets of *Desfontainea spinosa*, *Drimys winteri*, *Ovidia pillopillo*, *Gaultheria phillyreifolia* and the red-fruited *Gaultheria tenuifolia* the foliage of which smells strongly of winter-green. In the more open areas of forest there is an abundance of the trunk-forming fern, *Blechnum chilense*. Many species of *Berberis* abound, including *Berberis linearifolia*, *B. ilicifolia*, and the ubiquitous but nevertheless beautiful, *B. darwinii*.

One of the commonest trees of the lowland and montane forests is the evergreen southern beech, *Nothofagus dombeyi*. This handsome tree, which grows to be the largest broad-leaved tree in these forests, occasionally reaches heights of 50 metres. Here it is often associated with other evergreens, such as the much prized timber tree, *Laurelia philippiana* which has strongly aromatic leaves and *Caldcluvia paniculata*, which has creamish-yellow flowers. Amongst the many similar looking species of myrtles which are often seen draped with *Tropaeolum speciosum*, are more distinctive small trees such as *Rhaphithamnus spinosus*. This spine-clad member of the Verbena family has unusually deep green leaves and both flowers and fruits are purple.

The margins of the many streams create an ideal environment for plants which also need a little more light and a damp atmosphere. Such niches are brimming with gems such as *Crinodendron hookerianum*, *Azara lanceolata* and *Lomatia ferruginea*. Beneath, on moss sodden rocks, are the tight mats of *Calceolaria tenella*, its foliage studded with small yellow flowers on fragile stems, and *Gunnera magellanica* forming carpets of glossy leaves which conceal elongated clusters of fleshy, orange fruits.

With a rise in altitude, there is a gradual change in the type of vegetation which, although comprising fewer species is nevertheless very interesting. One of the most important trees, which becomes predominant at higher altitudes, is the conifer *Saxegothaea conspicua*. The vigorous climber, *Hydrangea serratifolia*, may well be seen high up amongst its canopy, clothed in creamy yellow flowers. Less invasive climbers are the gesneriads, *Asteranthera ovata* with scarlet flowers, and *Sarmienta repens* which is an endearing fleshy-leaved plant with orange-red flowers. Both of these are often seen clinging to the moss-covered trunks, whilst the third member of this family in Chile, *Mitraria coccinea*,

is less of a true climber and often forms spherical entanglements perched high up in the canopy.

As might be expected, the climate is very wet with all-year-round precipitation. The total annual rainfall at higher altitudes can be a staggering five metres, with some areas receiving a metre of rain in a single month. Although winter temperatures are not as severe as those experienced in some parts of the British Isles, it is particularly interesting to note that between an altitude of 250 and 1000 metres above sea level there can be up to 150 days of frosts in a year.

It is the southern beech, *Nothofagus*, which forms the tree line in Chile. Two species, *N. antarctica* and *N. pumilio* are deciduous, the third, *N. betuloides*, is evergreen. In the northern part of Chile's Lake District these species are accompanied by the monkey puzzle tree. In almost all other temperate parts of the world the tree line consists solely of coniferous trees. There is great excitement as the horticultural seed collector reaches the tree line, as seed collected here is more likely to be hardy for cultivation in the British Isles.

Away from the wind-pruned *Nothofagus*, which hug the volcanic escarpments there are sheltered gullies that have formed from progressive bouts of fast-flowing water following incessant rains. These are sanctuaries for small trees and shrubs many of which are familiar garden plants. The most spectacular is the Chilean fire bush, *Embothrium coccineum*, ever glowing red with flowers, and alive with humming-birds. *Escallonia alpina* forms impenetrable thickets along with the high altitude variety of winter's bark, *Drimys winteri* var. *andina*. Other isolated groups of plants that have managed to stabilise the precarious black volcanic ash slopes are the barberry, *Berberis empetrifolia*, parent to many important horticultural hybrids and the low suckering *Gaultheria poeppigii*, clothed in fleshy fruits that vary in colour from white through to scarlet.

Above the tree line the volcanic ash has been wind-drifted to form sculptured ridges, and clinker forged to form vast craggy outcrops. The alpine plants that grow in this hostile environment have become very highly adapted. They have armed themselves with far-reaching, thick, fleshy roots and are often mat-forming or have tight leaf rosettes.

Although some of the alpines occurring above the tree line, such as gentians and eyebrights are easily identified, many of the more bizarre plants, such as violas and members of the Compositae, bear little resemblance to their more familiar counterparts. For instance, vegetative growth of the rosulate violet, *Viola coronifera*, looks like rosette-forming saxifrage; it is not until they are seen in flower that their true identity is revealed. The typical violet-shaped

flowers are borne between the tight whorls of leaves and are pale mauve with a yellow centre. Composites have also become highly adapted to this environment, including *Nassauvias* which form well-branched perennials with congested stems of fleshy grey-green leaves and usually white flowers. *Chaetanthera villosa* is a suckering member of this family with yellowish orange flowers and all parts clothed with long villous hairs. *Lucilia chilensis* is a silvery leaved mat-forming plant which is closely related to the New Zealand native, *Raoulia.*

Although most of the more horticulturally desirable Chilean native plants have now been introduced in to cultivation, there is still a need for their regular reintroduction in order to maintain a broader genetic base from which to propagate and hybridise. Of these introductions the most valued will be plants from higher altitudes as they should prove to be more winter-hardy in the British Isles.